

What is Claimed is:

[c1] In a wireless communications system, a method for indicating features not supported by visitor location registers comprising the steps of:

sending, from a gateway location register to a home location register, a message including an indication of a feature not supported by a visitor location register for a subscriber;

sending, to the gateway location register, another message including another indication of a feature not supported by another visitor location register for the subscriber; and

determining, by the gateway location register, whether a feature is supported by the visitor location register which is not supported by the another visitor location register or whether a feature is supported by the another visitor location register which is not supported by the visitor location register.

[c2] The method of claim 1, wherein if the visitor location register supports a feature not supported by the another visitor location register or if the another visitor location register supports a feature which is not supported by the visitor location register, performing the step of:

sending, from the gateway location register to the home location register, a third message including a third indication, wherein the third indication implicitly indicates the feature supported by the visitor location register for the subscriber or the feature supported by the another visitor location register for the subscriber.

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- [c3] The method of claim 1, wherein the another indication of a feature not supported is empty, thereby indicating that the another visitor location register supports all features for the subscriber.
- [c4] The method of claim 1, wherein the message including the indication of the feature not supported by the visitor location register is sent to the home location register during a location updating message exchange.
- [c5] The method of claim 4, wherein the location updating message exchange is initiated by the gateway location register sending a MAP_UPDATE_LOCATION message to the home location register.
- [c6] The method of claim 2, wherein the third message is sent to the home location register during a location updating message exchange.
- [c7] The method of claim 6, wherein the location updating message exchange is initiated by the gateway location register sending a MAP_UPDATE_LOCATION message to the home location register.
- [c8] The method of claim 7, wherein the third message is a MAP_INSERT_SUBSCRIBER_DATA response confirmation message.
- [c9] The method of claim 2, wherein the third message is sent to the home location register during a fault restoration message exchange.
- [c10] The method of claim 9, wherein the fault restoration message exchange is initiated by the gateway location register sending a MAP_RESTORE_DATA message to the home location register.
- [c11] The method of claim 10, wherein the third message is a MAP_INSERT_SUBSCRIBER_DATA response confirmation message.

[c12] The method of claim 2, wherein the third message is sent to the home location register in an information updating message.

[c13] The method of claim 10, wherein the information updating message is a MAP_INFORMATION_UPDATE message.

[c14] The method of claim 1, wherein the subscriber's features is a feature selected from the group consisting of:

a supplementary service;

a regional subscription service;

a bearer service;

operator determined barring;

supported CAMEL phases; or

a teleservice.

[c15] The method of claim 1, further comprising the steps of:

determining whether the visitor location register is located in an entirely restricted area or whether the another visitor location register is located in the entirely restricted area; and

sending a third message including a third indication that the visitor location register or the another visitor location register is located in the entirely restricted area if it is determined that the visitor location register or the another visitor location register is located in the entirely restricted area.

[c16] In a wireless communication system, a method for supporting features associated with a subscriber roaming in a foreign network comprising the steps of:

sending a location updating message, from a visitor location register to a gateway location register, indicating that a subscriber is being served by the visitor location register;

indicating, to the gateway location register, which of the subscriber's features are supported by the visitor location register;

sending, to the subscriber's home location register, a message indicating which of the subscriber's features are supported by the visitor location register;

sending another location updating message, from another visitor location register to the gateway location register, indicating that the subscriber is being served by the another visitor location register;

indicating, to the gateway location register, which of the subscriber's features are supported by the another visitor location register; and

determining, by the gateway location register, whether the visitor location register supports features not supported by the another visitor location register or whether the another visitor location register supports features which are not supported by the visitor location register.

[c17] The method of claim 16, wherein if the visitor location register supports a feature which is not supported by the another visitor location register or if the another visitor location register supports a feature which is not supported by the visitor location register, performing the step of:

sending, to the subscriber's home location register, an indication message for indicating which of the subscriber's features are supported by visitor location register or which of the subscriber's features are supported by the another visitor location register.

[c18] The method of claim 17, wherein the indication message is sent to the home location register during a location updating message exchange.

[c19] The method of claim 18, wherein the location updating message exchange is initiated by the gateway location register sending a MAP_UPDATE_LOCATION message to the home location register.

[c20] The method of claim 19, wherein the indication message is sent from the gateway location register to the home location register in a MAP_INSERT_SUBSCRIBER_DATA response confirmation message.

[c21] The method of claim 17, wherein the indication message is sent to the home location register during a fault restoration message exchange.

[c22] The method of claim 21, wherein the fault restoration message exchange is initiated by the gateway location register sending a MAP_RESTORE_DATA message to the home location register.

[c23] The method of claim 22, wherein the indication message is sent from the gateway location register to the home location register in a MAP_INSERT_SUBSCRIBER_DATA response confirmation message.

[c24] The method of claim 17, wherein the indication message is sent to the home location register in an information updating message.

[c25] The method of claim 24, wherein the information updating message is a MAP_INFORMATION_UPDATE message.

[c26] The method of claim 16, wherein the subscriber's features are features selected from the group consisting of:

a supplementary service;

a regional subscription service;

a bearer service;

operator determined barring;

supported CAMEL phases; or

a teleservice.

[c27] The method of claim 16, further comprising the steps of:

determining whether the visitor location register is located in an entirely restricted area or whether the another visitor location register is located in the entirely restricted area; and

sending an indication message that the visitor location register or the another visitor location register is located in the entirely restricted area if it is determined that the visitor location register or the another visitor location register is located in the entirely restricted area.

[c28] A wireless communications system which indicates features not supported by visitor location registers, the wireless communication system comprising:

a gateway location register which sends a message including an indication of a feature not supported by a visitor location register for a subscriber to a home location register; and

another visitor location register which sends to the gateway location register, another message including another indication of a feature not supported by another visitor location register for the subscriber,

wherein the gateway location register determines whether a feature is supported by the visitor location register which is not supported by the another visitor location register or whether a feature is supported by the another visitor location register which is not supported by the visitor location register.

[c29] The system of claim 28, wherein if the visitor location register supports a feature which is not supported by the another visitor location register or if the another visitor location register supports a feature which is not supported by the visitor location register the gateway location register sends a third message to the home location register, the third message including a third indication, and the third indication implicitly indicates the feature supported by the visitor location register or the feature supported by the another visitor location register for the subscriber.

- [c30] The system of claim 28, wherein the another indication of a feature not supported is empty, thereby indicating that the another visitor location register supports all features for the subscriber.
- [c31] The system of claim 29, wherein the third message is sent to the home location register during a location updating message exchange which is initiated by the gateway location register sending a MAP_UPDATE_LOCATION message to the home location register.
- [c32] The system of claim 31, wherein the third message is a MAP_INSERT_SUBSCRIBER_DATA response confirmation message.
- [c33] The system of claim 29, wherein the third message is sent to the home location register during a fault restoration message exchange which is initiated by the gateway location register sending a MAP_RESTORE_DATA message to the home location register.
- [c34] The system of claim 33, wherein the third message is a MAP_INSERT_SUBSCRIBER_DATA response confirmation message.
- [c35] The system of claim 29, wherein the third message is sent to the home location register in an information updating message.
- [c36] The system of claim 34, wherein the information updating message is a MAP_INFORMATION_UPDATE message.
- [c37] The system of claim 28, wherein the subscriber's features is a feature selected from the group consisting of:

a supplementary service;

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a regional subscription service;
a bearer service;
operator determined barring;
supported CAMEL phases; or
a teleservice.

The system of claim 28, wherein if it is determined that the visitor location register is located in an entirely restricted area or that the another visitor location register is located in an entirely restricted area, the gateway location register provides a third indication that the visitor location register is not located in the entirely restricted area if it is determined that the another visitor location register is located in the entirely restricted area if the another visitor location register is located in the entirely restricted area.

a regional subscription service;
a bearer service;
operator determined barring;
supported CAMEL phases; or
a teleservice.

The system of claim 28, wherein if it is determined that the visitor location register is located in an entirely restricted area or that the another visitor location register is located in an entirely restricted area, the gateway location register provides a third indication that the visitor location register is not located in the entirely restricted area if it is determined that the another visitor location register is located in the entirely restricted area if the another visitor location register is located in the entirely restricted area.

a regional subscription service;
a bearer service;
operator determined barring;
supported CAMEL phases; or
a teleservice.

The system of claim 28, wherein if it is determined that the visitor location register is located in an entirely restricted area or that the another visitor location register is located in an entirely restricted area, the gateway location register provides a third indication that the visitor location register is not located in the entirely restricted area if it is determined that the another visitor location register is located in the entirely restricted area if the another visitor location register is located in the entirely restricted area.

a regional subscription service;
a bearer service;
operator determined barring;
supported CAMEL phases; or
a teleservice.

The system of claim 28, wherein if it is determined that the visitor location register is located in an entirely restricted area or that the another visitor location register is located in an entirely restricted area, the gateway location register provides a third indication that the visitor location register is not located in the entirely restricted area if it is determined that the another visitor location register is located in the entirely restricted area if the another visitor location register is located in the entirely restricted area.

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